

Claims

- [c1] A portable surface cleaning apparatus, comprising:
- a base housing adapted for movement along a surface to be cleaned;
 - an upright handle pivotally mounted to the base module;
 - a liquid dispensing system comprising:
 - a liquid dispenser associated with the base module for applying liquid to a surface to be cleaned;
 - a liquid supply tank removably mounted to the handle for holding a supply of cleaning liquid;
 - a liquid supply conduit fluidly connected to the liquid supply tank and to the dispenser for supplying liquid to the dispenser;
 - a liquid recovery system comprising:
 - a recovery tank removably mounted on the base housing having a liquid recovery chamber for holding recovered liquid;
 - a suction nozzle associated with the base housing and adapted to draw dirty liquid from the surface to be cleaned;
 - a working air conduit extending between the recovery chamber and the suction nozzle;
 - a vacuum source in fluid communication with the recov-

ery chamber for generating a flow of working air from the nozzle through the working air conduit and through the recovery chamber to thereby draw dirty liquid from the surface to be cleaned through the nozzle and working air conduit, and into the recovery chamber to thereby recover the dirty liquid from the surface to be cleaned; the improvement comprising:
the recovery tank has an outlet opening and a filter mounted in the outlet opening.

- [c2] A portable surface cleaning apparatus according to claim 1, and further comprising a tank vent mounted in the recovery tank outlet opening and the filter is mounted in the tank vent.
- [c3] A portable surface cleaning apparatus according to claim 2, wherein the tank vent is snap-fit into the outlet opening.
- [c4] A portable surface cleaning apparatus according to claim 1, wherein the recovery tank includes an inlet opening and the working air conduit is fluidly connected to the inlet opening, further comprising a diverter in the recovery tank in alignment with the inlet opening for breaking up the flow of dirty liquid entering the liquid recovery chamber.

- [c5] A portable surface cleaning apparatus according to claim 4, wherein the inlet opening is at an upper portion of the recovery tank and a top wall of the recovery tank is shaped to direct the flow of dirty liquid downwardly in the liquid recovery chamber.
- [c6] A portable surface cleaning apparatus according to claim 5, further comprising a baffle.
- [c7] A portable surface cleaning apparatus according to claim 6, wherein the baffle is positioned below the inlet opening and diverter.
- [c8] A portable surface cleaning apparatus according to claim 7, wherein the baffle includes a plurality of openings for passage of dirty liquid and air therethrough.
- [c9] A portable surface cleaning apparatus according to claim 1, wherein the working air conduit is formed at least in part integrally with the recovery tank.
- [c10] A portable surface cleaning apparatus, comprising:
a base housing adapted for movement along a surface to be cleaned;
an upright handle pivotally mounted to the base module;
a liquid dispensing system comprising:
a liquid dispenser associated with the base module for applying liquid to a surface to be cleaned;

a liquid supply tank removably mounted to the handle for holding a supply of cleaning liquid;

a liquid supply conduit fluidly connected to the liquid supply tank and to the dispenser for supplying liquid to the dispenser;

a liquid recovery system comprising:

a recovery tank removably mounted on the base housing having a liquid recovery chamber for holding recovered liquid;

a suction nozzle associated with the base housing and adapted to draw dirty liquid from the surface to be cleaned;

a working air conduit extending between the recovery chamber and the suction nozzle and formed at least in part integrally with the recovery tank;

a vacuum source in fluid communication with the recovery chamber for generating a flow of working air from the nozzle through the working air conduit and through the recovery chamber to thereby draw dirty liquid from the surface to be cleaned through the nozzle and working air conduit, and into the recovery chamber to thereby recover the dirty liquid from the surface to be cleaned;

the improvement comprising:

the recovery tank has an outlet opening for passage of air therethrough directly to the atmosphere.

[c11] A portable surface cleaning apparatus, comprising:

- a base housing adapted for movement along a surface to be cleaned;
- an upright handle pivotally mounted to the base module;
- a liquid dispensing system comprising:
 - a liquid dispenser associated with the base module for applying liquid to a surface to be cleaned;
 - a liquid supply tank removably mounted to the handle for holding a supply of cleaning liquid;
 - a liquid supply conduit fluidly connected to the liquid supply tank and to the dispenser for supplying liquid to the dispenser;
- a liquid recovery system comprising:
 - a recovery tank removably mounted on the base housing having a liquid recovery chamber for holding recovered liquid;
 - a suction nozzle associated with the base housing and adapted to draw dirty liquid from the surface to be cleaned;
 - a working air conduit extending between the recovery chamber and the suction nozzle;
 - a vacuum source in fluid communication with the recovery chamber for generating a flow of working air from the nozzle through the working air conduit and through the recovery chamber to thereby draw dirty liquid from the surface to be cleaned through the nozzle and work-

ing air conduit, and into the recovery chamber to thereby recover the dirty liquid from the surface to be cleaned; the improvement comprising:

a cord wrap on the handle assembly for wrapping the cord in a loop, an electrical cord mounted to the handle adjacent the cord wrap and connected to the vacuum source, and a strain relief collar mounted on the electrical cord at the handle and aligned with the cord wrap so that the electrical cord is relatively straight between the handle and the cord wrap.

[c12] A portable surface cleaning apparatus according to claim 11, wherein the strain relief is formed of an elastomeric material.

[c13] A portable surface cleaning apparatus, comprising:
a base housing adapted for movement along a surface to be cleaned;
an upright handle pivotally mounted to the base module;
a liquid dispensing system comprising:
a liquid dispenser associated with the base module for applying liquid to a surface to be cleaned;
a liquid supply tank removably mounted to the handle for holding a supply of cleaning liquid;
a liquid supply conduit fluidly connected to the liquid supply tank and to the dispenser for supplying liquid to the dispenser;

a liquid recovery system comprising:
a recovery tank removably mounted on the base housing having a liquid recovery chamber for holding recovered liquid;
a suction nozzle associated with the base housing and adapted to draw dirty liquid from the surface to be cleaned;
a working air conduit extending between the recovery chamber and the suction nozzle;
a vacuum source in fluid communication with the recovery chamber for generating a flow of working air from the nozzle through the working air conduit and through the recovery chamber to thereby draw dirty liquid from the surface to be cleaned through the nozzle and working air conduit, and into the recovery chamber to thereby recover the dirty liquid from the surface to be cleaned;
the improvement comprising:
the vacuum source includes an inlet conduit connected to the working air conduit and a grill in the inlet conduit to prevent debris from entering the vacuum source.

[c14] A portable surface cleaning apparatus according to claim 13, and further including a flow restricting baffle upstream from the grill in the inlet conduit.

[c15] A portable surface cleaning apparatus, comprising:
a base housing adapted for movement along a surface to

be cleaned;

an upright handle pivotally mounted to the base module;

a liquid dispensing system comprising:

a liquid dispenser associated with the base module for applying liquid to a surface to be cleaned;

a liquid supply tank removably mounted to the handle for holding a supply of cleaning liquid;

a liquid supply conduit fluidly connected to the liquid supply tank and to the dispenser for supplying liquid to the dispenser;

a liquid recovery system comprising:

a recovery tank removably mounted on the base housing having a liquid recovery chamber for holding recovered liquid;

a suction nozzle associated with the base housing and adapted to draw dirty liquid from the surface to be cleaned;

a working air conduit extending between the recovery chamber and the suction nozzle;

a vacuum source including a vacuum motor in fluid communication with the recovery chamber for generating a flow of working air from the nozzle through the working air conduit and through the recovery chamber to thereby draw dirty liquid from the surface to be cleaned through the nozzle and working air conduit, and into the recovery chamber to thereby recover the dirty liquid from the

surface to be cleaned;

the improvement comprising:

the base housing including a cooling air inlet on an underside thereof in communication with the vacuum motor.

[c16] A portable surface cleaning apparatus according to claim 15, the base housing further comprising a cooling air outlet on a lower portion thereof.